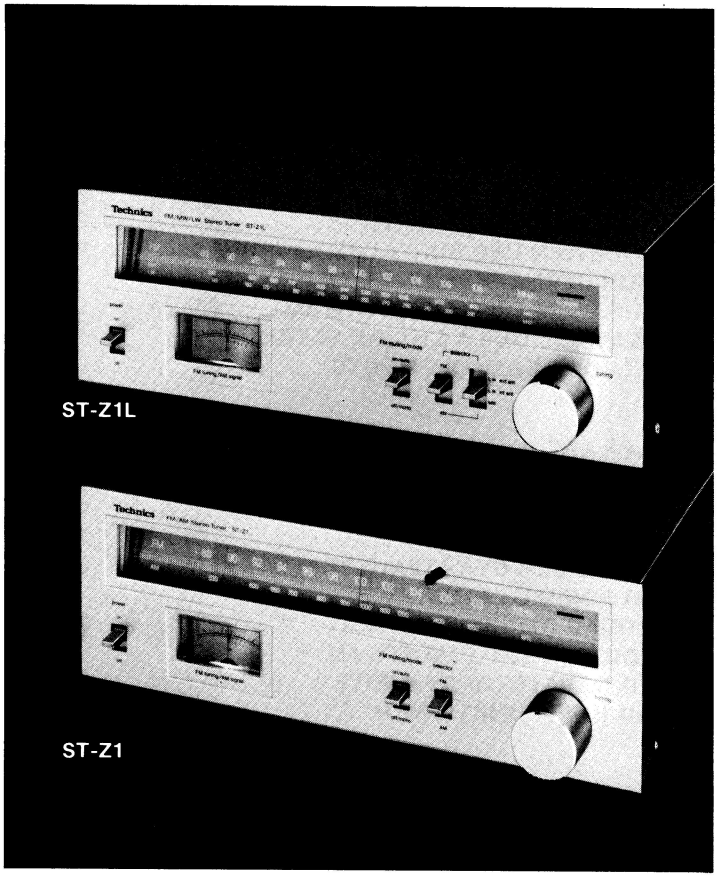
Technics

FM/MW/LW Stereo Tuner
ST-Z1L
FM/AM Stereo Tuner
ST-Z1

OPERATING INSTRUCTIONS



- Also available in black.

Before operating this unit, please read these instructions completely.

ENGLISH

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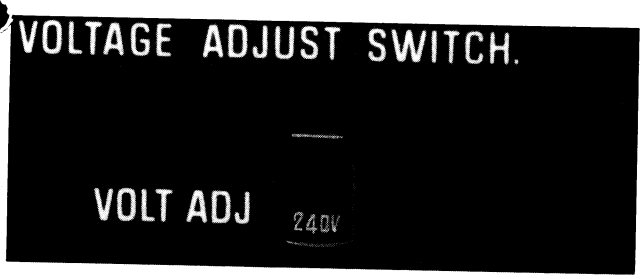
Dear Stereo Fan

We want to thank you for selecting this product and to welcome you to the growing family of satisfied Technics product owners around the world. We feel certain you will get maximum enjoyment from this new addition to your home. Please read these operating instructions carefully, and be sure to keep them handy for convenient reference.

BEFORE USING THIS UNIT

Use a minus (−) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.
Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)



ACCESSORIES

- FM indoor antenna (feeder antenna) 1
- Stereo pin-type cord 1

MAINTENANCE OF EXTERNAL SURFACES

To clean, use a soft, dry cloth. If the surfaces are extremely dirty, use a soft cloth soaked in a detergent (such as used for washing dishes; diluted to 1/5 or 1/6 strength), and then wring the cloth well. Wipe once again with a soft, dry cloth.

FOR UNITED KINGDOM

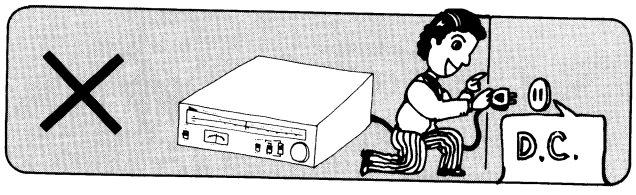
Important
THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.
BLUE: NEUTRAL
BROWN: LIVE
As the colours of the wires in the mains lead of this unit may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows. The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

FOR SAFE USE OF THIS UNIT

■ Use an ordinary household AC power source

1. **Use from an AC power source of high voltage, such as for air conditioners, is very dangerous.**
   Be extremely careful not to make a connection to the electrical outlet for a large air conditioner or central-heating unit which uses high voltage, because there is the possibility of fire.

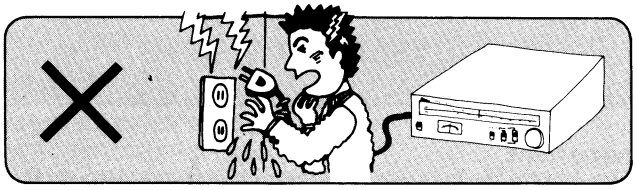
2. **A DC power source cannot be used.**
   Be sure to check the power source carefully, especially on a ship or other place where DC is used.



FOR SAFE USE OF THIS UNIT
(continued)

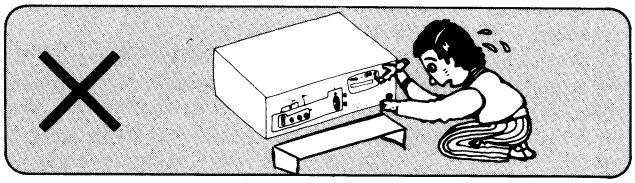
■ Connection and disconnection of the power cord plug

1. **Wet hands are dangerous.**
   A dangerous electric shock may result if the plug is touched by wet hands.
2. **Don't pull the power cord.**
   Always grasp the plug; never pull the cord itself.



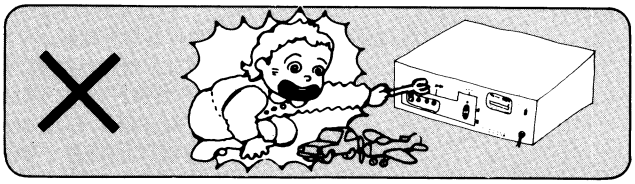
■ Never attempt to repair or reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidently touched.



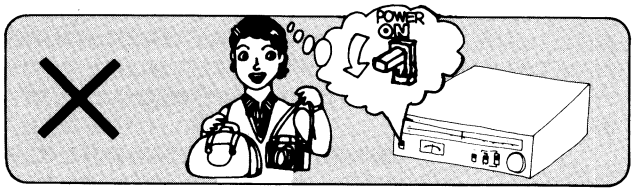
■ For families with children

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.



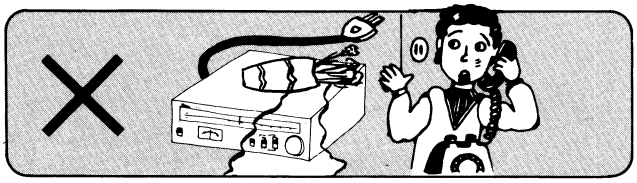
■ Turn off after use

If the unit is left for a long time with the power on, this will not only shorten its useful operation life, but may also cause other unexpected trouble.



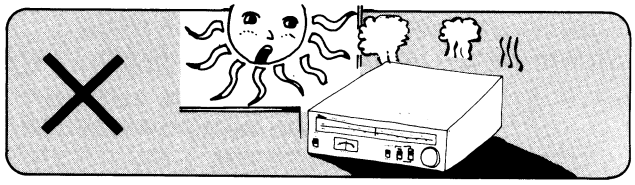
■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.



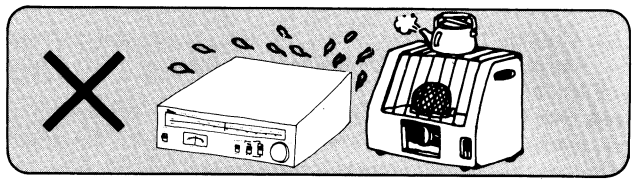
■ Place the unit where it will be well ventilated, and away from direct sunlight

Place this unit at least 10 cm (4") away from wall surfaces, etc., and away from direct sunlight.



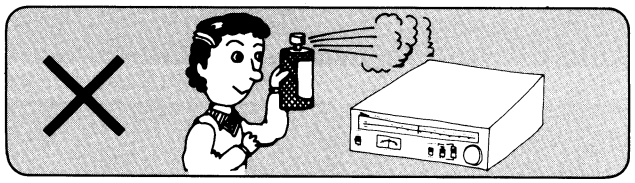
■ Keep the unit away from stoves, etc.

Heat can damage the external surfaces as well as internal circuits and components.



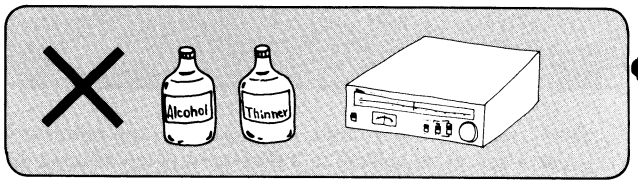
■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.



■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they may damage the finish.



■ If trouble occurs

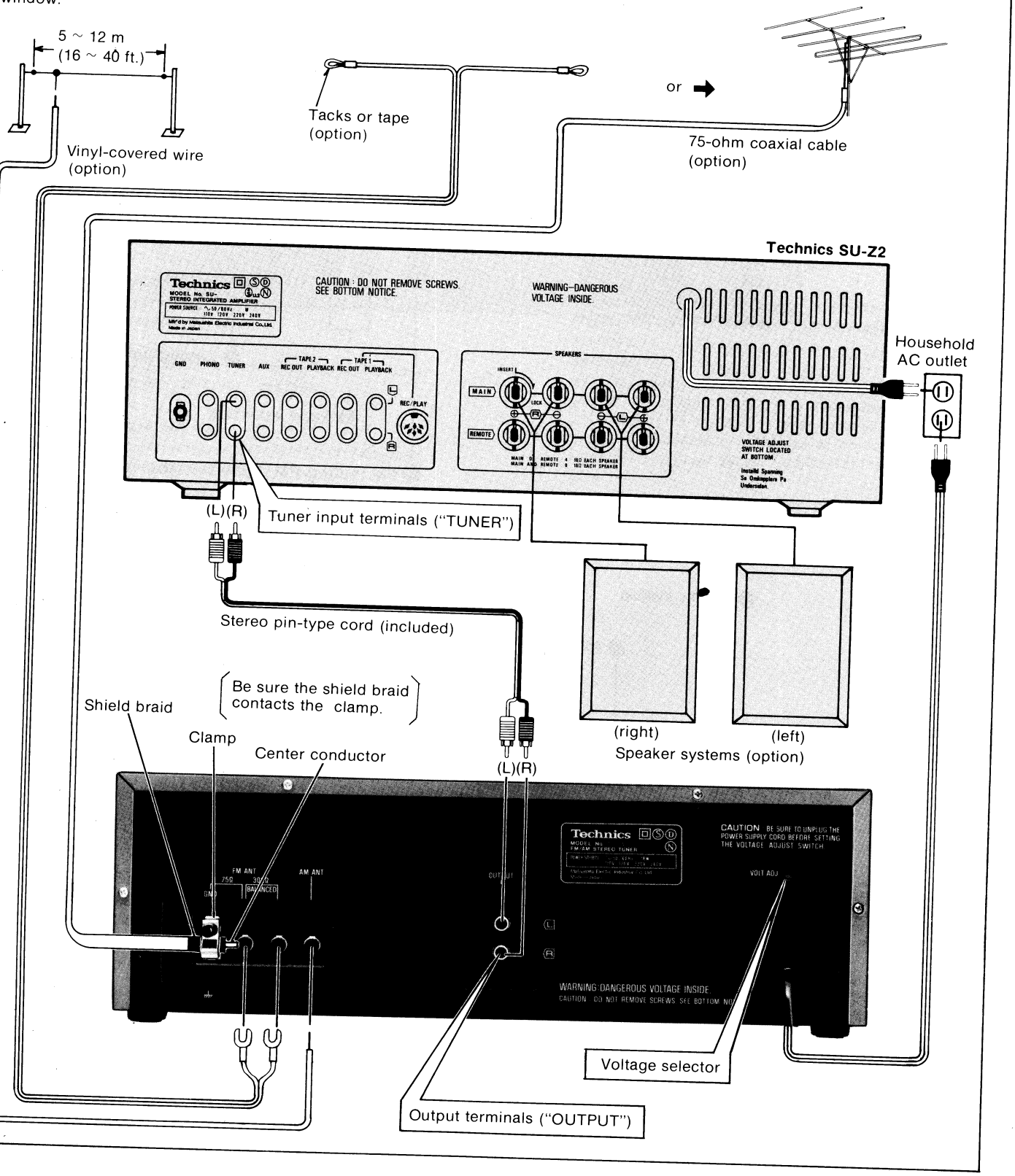
If, during operation, the sound is interrupted or lamps no longer illuminate, or if abnormal odor or smoke is detected, immediately disconnect the power cord plug, and contact your dealer or an Authorized Service Center.

STEREO SYSTEM COMPONENTS AND THEIR CONNECTIONS

AM outdoor antenna (option)
(Necessary in mountainous region, inside reinforced-concrete building, etc.)
Use 5 ~ 12 m (16 ~ 40 ft.) of vinyl-covered wire horizontally at the window.

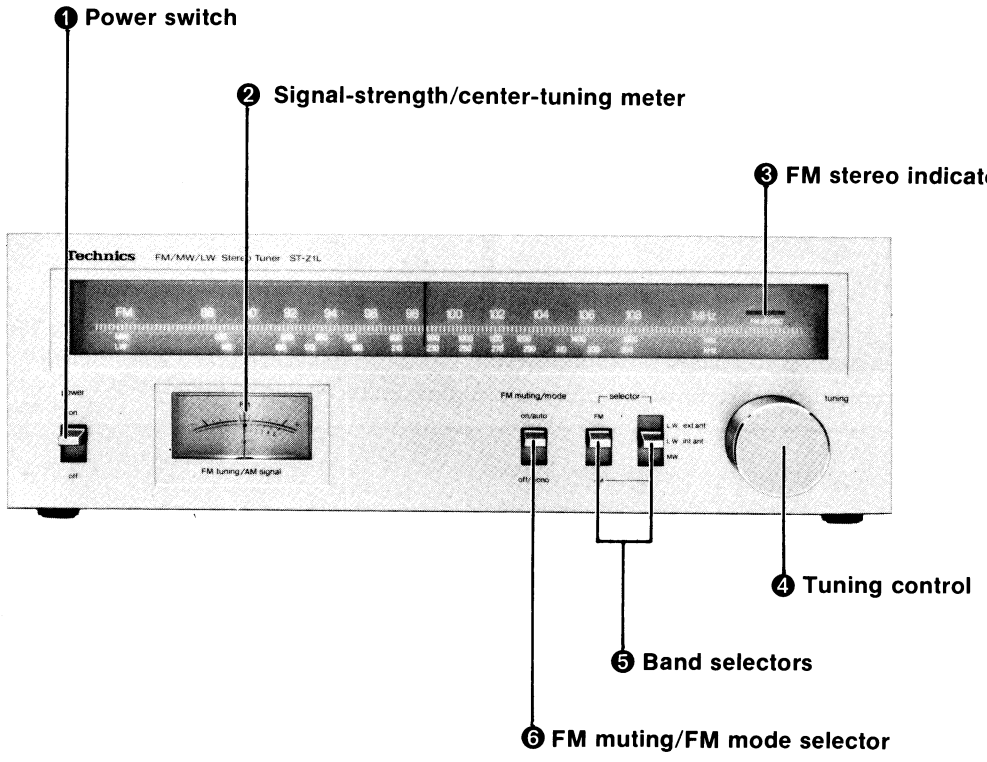
FM indoor antenna (included)
- Unfold to T-shape, and attach to a wall (using tacks or tape) facing in direction of best reception.
- Disconnect this antenna if an FM outdoor antenna is installed.

FM outdoor antenna (option)
(Necessary in mountainous region, inside reinforced-concrete building, etc.)

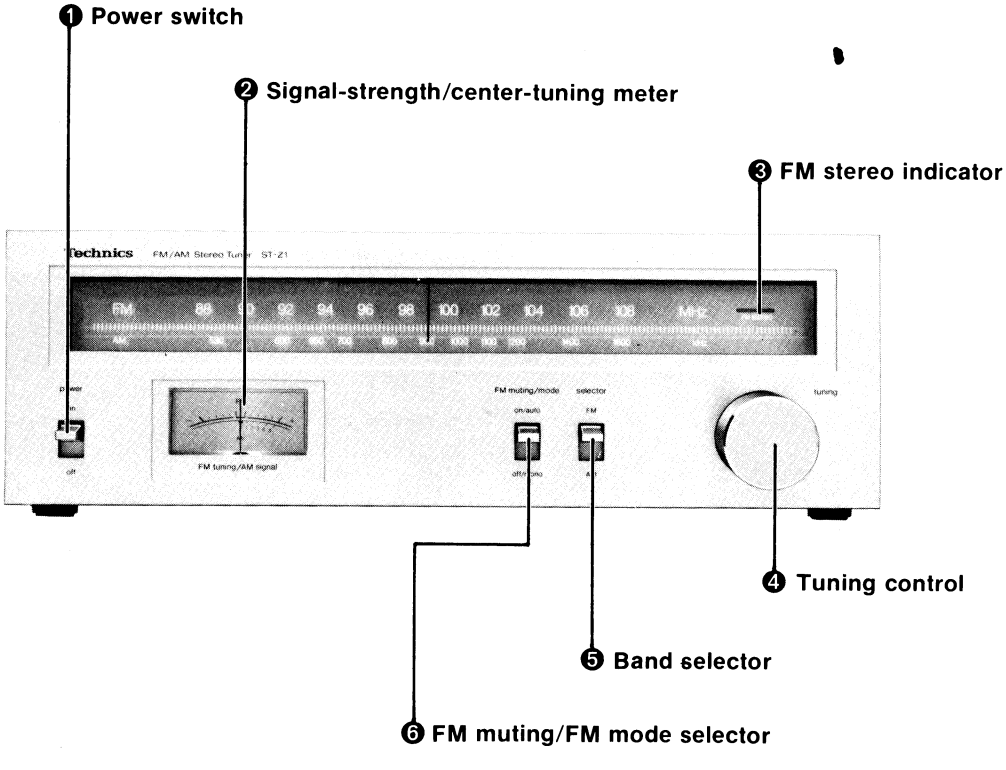


FRONT PANEL CONTROLS AND THEIR FUNCTIONS

FM/MW/LW Stereo tuner ST-Z1L



FM/AM Stereo tuner ST-Z1



❶ Power switch (power)

Note:
Before turning the power on, make sure the volume control of the amplifier is set to the minimum ("0") position.

❷ Signal-strength/center-tuning meter (FM tuning/AM signal)

This meter functions as a signal-strength meter for AM broadcasts, and as a center-tuning meter for FM broadcasts.

For AM broadcast reception:
The best-tuned position is where the indication needle moves as far as possible to the right.

For FM broadcast reception:
Disregarding signal strength, the meter indicates the point of least distortion and best tone quality. During tuning, the indication will fluctuate to the left and right, and then move to the center at the best-tuned position.
Note that this meter will also indicate the center position when the broadcast is completely detuned.

❸ FM stereo indicator (FM stereo)

This indicator automatically illuminates when an FM stereo broadcast is being received.

Note:
It will, however, not illuminate if the FM muting/FM mode selector ⑥ is set to the "off/mono" position.

❹ Tuning control (tuning)

Tune to the desired broadcast while referring to the signal-strength/center-tuning meter ②.

❺ Band selectors (selector) (for ST-Z1L)

FM:
Set to this position for reception of FM broadcasts.

AM:
Set to this position for reception of LW or MW broadcasts.

LW EXT ANT:
Set to this position for reception of LW broadcasts if there is an AM outdoor antenna.

LW INT ANT:
Set to this position for reception of LW broadcasts if there is no AM outdoor antenna.

MW:
Set to this position for reception of MW broadcasts.

❺ Band selector (selector) (for ST-Z1)

FM:
Set to this position for reception of FM broadcasts.

AM:
Set to this position for reception of AM broadcasts.

❻ FM muting/FM mode selector (FM muting/mode)

This selector can be used during tuning to eliminate the annoying noise between FM broadcast stations, and to select either stereo or monaural reception of FM broadcasts. There is no effect upon AM broadcasts.

on/auto:
Set to this position for ordinary use. FM stereo and monaural broadcasts can be received, and between-station noise is eliminated.

off/mono:
All broadcasts will be received monaurally.
Use at this position if there is excessive noise in stereo broadcasts or if signals are weak because of reception far from the broadcasting station or in a mountainous region, when the broadcast cannot be heard at the "on/auto" position.
To avoid between-station noise, reduce the setting of the volume control before tuning.

LISTENING TO RADIO BROADCASTS

Follow the steps below for reception of FM and AM broadcasts.

Note:
For reception of all broadcasts, FM and AM, carefully read the operation instructions of the amplifier.

■ To listen to an FM broadcast

1. **Operation of the amplifier:**
   Set all switches and controls so that radio broadcasts can be received.
2. **Operation of this unit:**
   1) Power switch ① ..... "on"
   2) FM muting/FM mode selector ⑥ ..... "on/auto"
   3) Band selector(s) ⑤ ..... "FM"
   4) Tune to the desired broadcast while referring to the signal-strength/center-tuning meter ②.
   If there is excessive noise in an FM stereo broadcast, set the FM muting/FM mode selector ⑥ to the "off/mono" position. Note that the broadcast will be heard monaurally.
3. **Volume adjustment:**
   Adjust the volume and tone quality, if necessary, by using the controls on the amplifier.

■ To listen to an AM broadcast

Except for the following steps, the procedure is the same as that described in the section "To listen to an FM broadcast" above.

Operation of this unit:

1. Band selectors ⑤ **(ST-Z1L)** ..... Set to the "AM" position, and then select LW or MW.

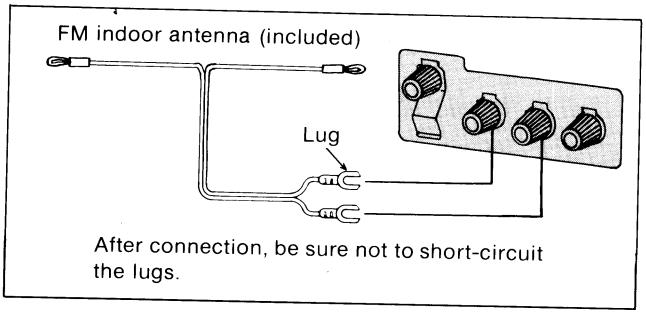
1. Band selector ⑤ **(ST-Z1)** ..... "AM"
2. Tune to the desired broadcast while referring to the signal-strength/center-tuning meter ②.
   The FM muting/FM mode selector ⑥ has no effect at either position when AM broadcasts are being received.

FM ANTENNA

For best reception of FM broadcasts, select an FM antenna with the best characteristics for the area in which the unit is to be used.

■ Included antenna

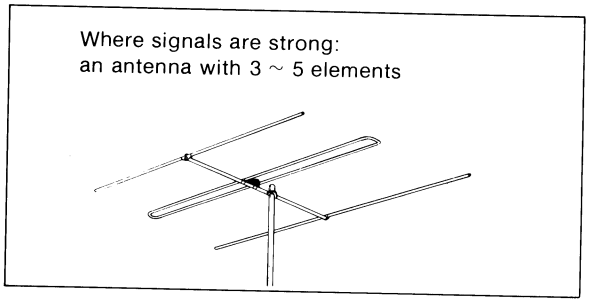
The included antenna is easy to install and is suggested for use until a permanent antenna is installed especially for FM. An antenna especially for FM should be installed in order to obtain the best reception characteristics of which this unit is capable.



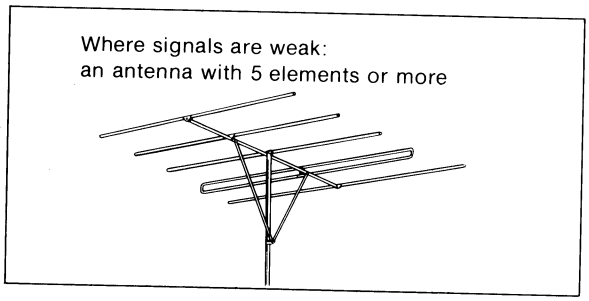
■ Antenna exclusively for FM reception

1. Selection

1) In areas where very strong broadcast signals are received (where the transmitting antenna can be seen), use an outside antenna with 3 ~ 5 elements.



2) In areas where weak broadcast signals are received (in mountainous regions or between tall buildings), use an outside antenna with 5 elements or more.



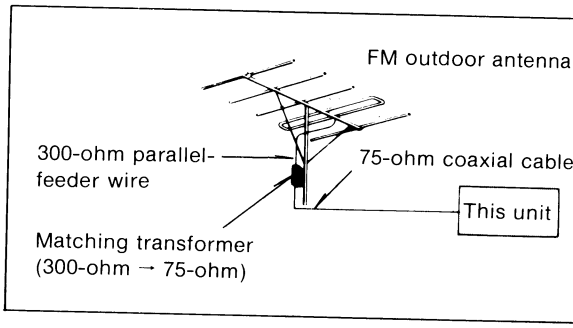
Note:
Consult with your dealer for detailed advice concerning the number of elements the antenna should have.

2. Connection wire from the antenna

Two types of wire are most commonly used for connection from the antenna: 300-ohm parallel feeder wire and 75-ohm coaxial cable. For best resistance to external interference noise, the use of 75-ohm coaxial cable is suggested.

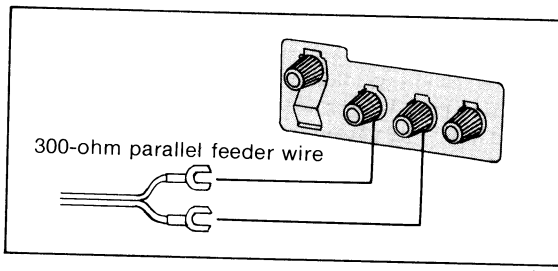
3. Impedance matching

If it is impossible to make a direct connection with 75-ol coaxial cable from the antenna, a matching transform should be installed, as close to the antenna itself as possib

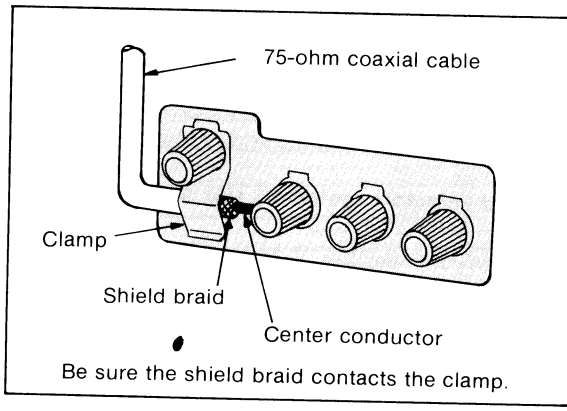


4. Connection

1) If 300-ohm parallel feeder wire is used:



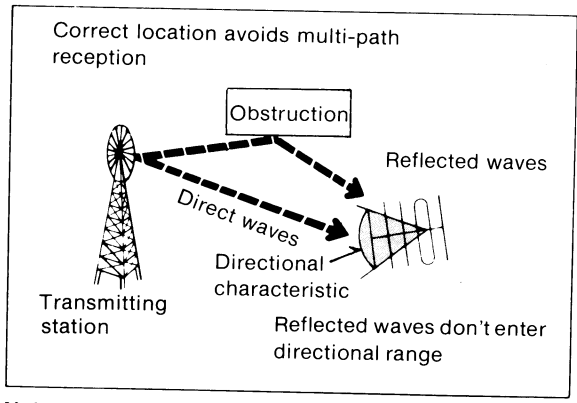
2) If 75-ohm coaxial cable is used:



5. Location of antenna

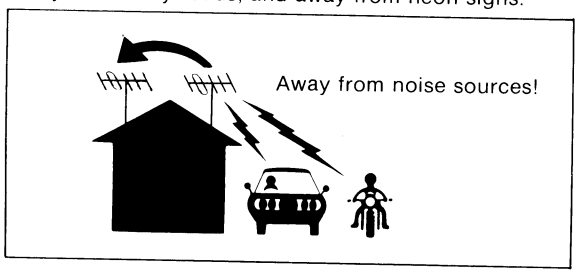
Install the antenna:

1) Where it will receive FM broadcast signals directly; not in the "shadow" of a building.

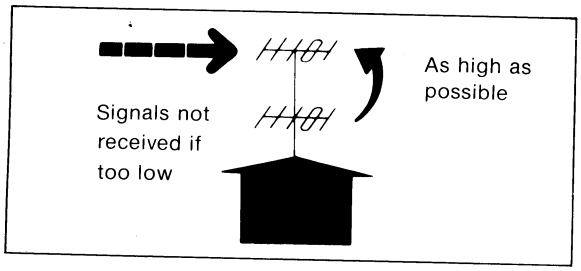


Note:
Multi-path distortion is the distortion which results from the reception of two types of signals: those reflected from nearby buildings, mountains, etc., and those received directly from the broadcasting station.

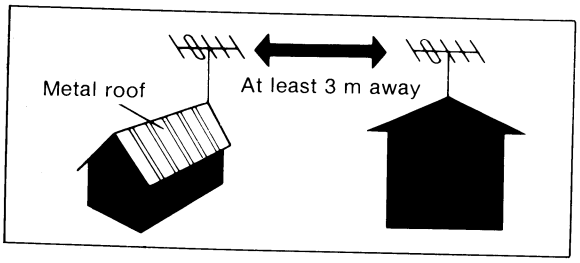
2) Away from busy roads, and away from neon signs.



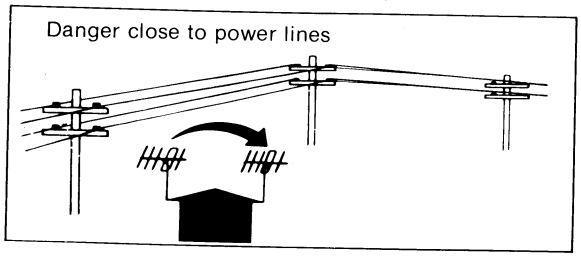
3) At least 4 meters (12 feet) above the ground (except in mountainous regions, etc.).



4) At least 3 meters (10 feet) away from a metal roof or other antennas.



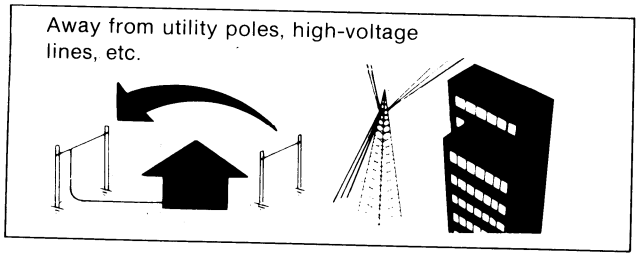
5) To avoid danger, away from electric power lines.



AM ANTENNA

■ Connection of an outdoor antenna

If an outside AM antenna is installed (in mountainous regions or between reinforced-concrete buildings), install it in a location away from utility poles, high-voltage power lines, high buildings and busy roads.



TECHNICAL SPECIFICATIONS

(DIN 45 500)

FM TUNER SECTION

Frequency range	88~108 MHz
Sensitivity	2.0 μV (IHF, usable)
S/N 30 dB	2.0 μV (300Ω), 1.3 μV (75Ω)
S/N 26 dB	1.8 μV (300Ω), 1.2 μV (75Ω)
S/N 20 dB	1.6 μV (300Ω), 0.9 μV (75Ω)
IHF 46 dB stereo quieting sensitivity	25 μV/75Ω
Total harmonic distortion	
MONO	0.15%
STEREO	0.3%
S/N	
MONO	69 dB (75 dB, IHF)
STEREO	65 dB (70 dB, IHF)
Frequency response	20 Hz~15 kHz, +1 dB~ −2 dB
	20 Hz~13 kHz, +1.5 dB~ −1.5 dB
Alternate channel selectivity	60 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	60 dB
IF rejection at 98 MHz	72 dB
Spurious response rejection at 98 MHz	80 dB
AM suppression	55 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	
19 kHz	−30 dB (−35 dB, IHF)
38 kHz	−45 dB (−50 dB, IHF)
Channel balance (250 Hz~6,300 Hz)	±1.5 dB
Limiting point	1.2 μV
Power bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	300Ω (balanced)
	75Ω (unbalanced)

AM TUNER SECTION (ST-Z1)

Frequency range	525~1605 kHz
Sensitivity (S/N 20 dB)	30 μV, 300 μV/m
Selectivity	27 dB
Image rejection at 1,000 kHz	50 dB
IF rejection at 1,000 kHz	40 dB

AM TUNER SECTION (ST-Z1L)

Frequency range	
MW	525~1605 kHz
LW	145~350 kHz
Sensitivity (S/N 20 dB)	
MW	30 μV, 300 μV/m
LW	30μV
Selectivity	
MW	27 dB (1000 kHz)
LW	35 dB (250 kHz)
Image rejection	
MW	50 dB (1000 kHz)
LW	40 dB (250 kHz)
IF rejection	
MW	40 dB (1000 kHz)
LW	40 dB (250 kHz)

GENERAL

Output voltage	0.3V
	(0.6V, IHF)
Power consumption	18W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	410 × 142 × 223 mm
	(16-5/32" × 5-19/32" × 8-25/32")
Weight	3.3 kg
	(7.3 lb.)

TROUBLESHOOTING GUIDE

Before requesting service for this unit, check this table to determine if the problem can be solved as described below. If the problem still persists after making these checks, or if there are symptoms of malfunction not described in this table, it is recommended that you consult the store where this unit was purchased or your local Service Center (see list included) for further information and assistance.

Note:
The information shown in this table is based upon the use o
this unit in combination with the Technics model SU-Z2/Z

	Problem	Probable cause(s)	Suggested remedy
While listening to FM broadcasts	**An unusual hissing noise is heard when listening to the broadcast in stereo, but not heard when listening monaurally.**	A slight noise may be heard because the method used for modulation of FM stereo broadcasts is different than that used for monaural broadcasts.	• Try reducing the treble sound by using the treble tone control of the amplifier. • Set the FM muting/FM mode selector ⑥ to the "off mono" position. (Note that the broadcast will then be heard as monaural sound.) • Try changing the location, height and/or direction o the antenna. • If an interior antenna is being used, change to ar exterior antenna. • Try using an antenna with more elements.
	Noise is excessive in both stereo and monaural broadcasts.	Poor location and/or direction of the antenna. Transmitting station is too far away.	
	The FM stereo indicator flickers, without completely illuminating.	Poor location and/or direction of the antenna. Transmitting station is too far away.	• Try changing the location, height and/or direction o the antenna. • If an interior antenna is being used, change to an exterior antenna. • Try using an antenna with more elements.
	Sound is distorted and/or the volume level becomes low.	Broadcast signals are being disturbed. Nearby automobile traffic or airplanes.	
	Excessive noise in stereo broadcasts; sometimes no sound is emitted.	Poor location and/or direction of the antenna. Transmitting station is too far away.	
	Excessive distortion in the sound of stereo broadcasts.	Nearby building or mountain. [Multi-path distortion is being caused by the mutual interference of broadcast signals received directly from the transmitting station (direct waves) and signals being reflected from nearby buildings or mountains (reflected waves).]	
	An unusual "popping" noise is heard when automobiles pass.	Such noise is called ignition noise, and occurs while the automobile engine is running.	• Relocate the antenna and the connection wires leading to it to a place farther away from where automobiles pass.
	A strange hissing noise is produced continuously or intermittently.	Caused by the "discharge phenomenon" and the "oscillation phenomenon" of electric appliances (such as fluorescent lights, TV, small series-type motors, rectification equipment, etc.).	• Try placing this unit farther away from such equipment. • Install noise-prevention equipment on this unit or on the electric appliance.

	Problem	Probable cause(s)	Suggested remedy
While listening to AM broadcasts	**An unusual "beat" sound is heard.**	Unit is being used at the same time as the television set.	• Turn off the television set, or use this unit farther away from it.
		Interference from adjacent broadcast signal.	• Try using the treble tone control of the amplifier to reduce the treble sound.
	A low-pitched "hum" sound is heard when the broadcast is tuned.	The antenna connection wires are too close to the power cord.	• Place the antenna connection wires and the power cord farther apart.
		The power supply frequency from the power cord is modulated and heard from the speakers.	• Try reversing the connection of the power cord plug. • Install a special exterior antenna.
	A strange hissing noise is produced continuously or intermittently.	Caused by the "discharge phenomenon" and the "oscillation phenomenon" of electric appliances (such as fluorescent lights, TV, small series-type motors, rectification equipment, etc.).	• Try placing this unit farther away from such equipment. • Install noise-prevention equipment on this unit or on the electric appliance.
Problems noted at all times	**No sound is heard when the power is turned on.**	The power cord plug is not completely inserted.	• Confirm that the power cord plug is connected completely.
		Connections are incomplete or incorrect to the speaker systems, the power amplifier, etc.	• Check to be sure that all connection wires are correctly connected.
		The setting of the input selector of the amplifier is not correct.	• Check to be sure that the selector is set to the correct position.
		The tape-monitor selector of the amplifier is set, incorrectly, to the "tape position.	• Except for tape playback, set the tape-monitor selector to the "source" position.
	When listening to stereo sound, each sound of the various musical instruments is not heard from its correct position.	The positive (+) and negative (−) connections of the speaker connection wires are reversed.	• Reconnect the speaker connection wires so that the positive and negative connections are correct.
	When listening to stereo sound, the left and right sounds are reversed.	The left and right connections of the speaker connection wires are reversed.	• Check the connections of the speaker connection wires and make them correctly.
		The left and right connections of the connection wires connected to other equipment are reversed.	• Check the connections of the connection wires to other equipment and make them correctly.
	A low-pitched noise ("hum" or "buzz") is heard.	The power cord or a fluorescent light, etc., is near the connection wires.	• Try separating this unit and the electric appliance as far as possible. • Reverse the connection of the power cord plug.
		The connection of the ground wire is incorrect or incomplete.	• Check to be sure that the grounding connection is correct. • If the unit is not grounded, try doing so.
	Sound is not heard from the speaker system on one side.	The speaker connection wires are disconnected.	• Check and correct the connections of the speaker connection wires.
		The balance control of the amplifier is not set to the center position.	• Set the mark on the balance control to the center position.
	The volume level for a radio broadcast is different from that for disc play.	The strength of the broadcast signal is not the same as the output from the record player.	• Use the volume control of the amplifier to adjust the volume.